SURVEY OF SPRUCE BUDWORM ON THE
CARSON, SANTA FE, AND CIBOLA NATIONAL FORESTS
1949

The spruce budworm, Archips fumiferana Clem., has been of endemic proportions in parts of the Carson, Santa Fe and Cibola National Forests for many years. While its present position or status is not yet of the serious nature that it sometimes reaches in timber stands, the budworm is beyond the threatening stage to fir and spruce in more than one locality. It is seriously damaging trees of high recreational value and doing striking damage to a relatively new forest crop, small firs and spruces of Christmas tree value.

CARSON NATIONAL FOREST

Incidental to the survey of aspens on the Carson on September 9 to 12, normal hosts of the spruce budworm were examined for evidence of infestation. Slight but unimportant damage, to spruce was observed only in Policarpio Canyon of the Rio Pueblo ranger district.

SANTA FE NATIONAL FOREST

On the Santa Fe, inspected from September 13 to 17, spruce budworm infestations varied from generally endemic on the Las Vegas, Pecos, Colonias, and Tesuque ranger districts to heavy on the Cuba and Jemez River districts.

Both on the Jemez River and Cuba districts the damage to spruce and Douglas-fir timber trees was heavy but not severe enough yet to have resulted in heavy defoliation or bark beetle attacks. The infestations, however, have been intensive enough to result in much damage to the understory of spruce and fir. During the past few years the demand for Christmas trees and trees for ornamental plantings from this forest has been growing. The increase in demand is such that Christmas (and ornamental) tree management may be in order. Damage by spruce

budworm is reducing the values of the trees and in some areas, such as on the ridge between Rio San Antonio and Sulphur Creek near La Cueva, and in the area near the Las Conchas guard station, practically all the spruces and firs of Christmas tree size have been ruined. Similarly, there is spruce budworm damage to timber trees and reproduction on the ridge east of Rabbit Mountain which runs approximately 9 miles south towards San Miguel Dome from State Route 4. The spruce and fir reproduction extends along the entire ridge but occurs in scattered groups. However, not all areas of spruce and fir reproduction on these two districts have been damaged by spruce budworm. One such area is the Presa Creek drainage in the vicinity of the Rio Las Vacas guard station where no indication of budworm damage to reproduction was observed. This is an area where ornamental trees are being removed and a heavy Christmas tree harvest is expected this year. The occurrence of budworm infestation near this area suggests that close tabs be kept on the reproduction so control efforts might be initiated when first attacks occur.

The estimated total of the areas on the Jemez River district in need of protection comprises about 3000 acres. No damage was observed on this year's potential crop of Christmas trees on the Cuba district.

Spruce Budworm Control

The damage to spruce and fir reproduction on the Jemez River district is so severe that, if control efforts were begun now on the already damaged trees, several years of protection might be necessary before well formed and foliaged trees can be harvested. Provided Christmas trees are to be handled as a crop it is advisable to begin control measures in the spring of 1950.

CIBOLA NATIONAL FOREST

Inspections from September 18 to 20 on the Cibola revealed considerable damage and threat by the spruce budworm and especially confirmed the need for immediate control measures against the budworm (and barkbeetles) in recreational areas.

On the Sandia district Douglas-fir and white fir on the Loop Road from Tree Springs and on up to and on the La Madera ski area had been defoliated by the budworm to the extent that many of the trees, especially the white firs, had been weakened then attacked and killed by the fir engraver, Scolytus ventralis Lec.. These trees are primarily of aesthetic and recreational value, and necessary to the ski area.

The budworm was also severaly damaging the firs at the Capulin picnic area and in approximately 2500 acres north and west of this picnic ground. Reproduction in this infested area is also suffering from budworm attacks.

Bark Beetle Control

It is imperative to destroy the bark beetle brood this winter either by felling and burning the attacked trees or by spraying the infested bark areas with a mixture of 1 part orthodichlrobenzene and 6 parts No. 2 fuel oil

Spruce Budworm Control

Further control of the spruce budworm must be started this coming spring if bark beetle control is to be effective. The firs must be kept free of defoliaters. And, if the fir and spruce reproduction is an actual or potential Christmas tree crop, control measures on it ~~shall be begun~~ should begin soon.

With ample care and effort the large trees as well as the reproduction along the road sides, at camp grounds and on the ski area could be properly sprayed by mist-blower. The urgent need for budworm control over the whole infested area of the Sandia, however, will necessitate spray application from aircraft.

On the Mount Taylor district approximately 1000 acres of spruce and Douglas-fir are infested with budworm. The situation is probably of endemic proportion although here too the spruce and fir reproduction is suffering severely. From the Christmas tree standpoint, tree values are being noticeably reduced.

Spruce Budworm Control

Control measures are advisable and should be initiated as soon as possible. Aircraft spraying could do the entire job satisfactorily. Much of the area could be adequately sprayed by mist-blower.

Control Methods

DDT solution sprays will control the spruce budworm. Mist blower applications could do well for fir and spruce reproduction, but the heights of many of the trees might be too great for optimum coverage from the ground unless particular care was exercised. Airplane or helicopter applications of sprays could satisfactorily cover both trees and reproduction.

Most of the fir and spruce reproduction now commercially desirable and available on the Santa Fe and Cibola for the Christmas tree market is accessible for mist blower work.

Spray Formulations

One pound of DDT per gallon of spray solution (12½ percent DDT) applied at the rate of one pound (one gallon) per acre will satisfactorily control the spruce budworm. ~~This spray solution is prepared by dissolving 1 pound of technical grade DDT in 1 pint of xylene and 7 pints of kerosene. This mixture should be kept at a temperature between 80°F. and 100°F.~~

Spray Application

DDT sprays are best applied for budworm control after the buds have opened, part of the current year's foliage is consumed, and the larvae are approximately half grown. This necessitates preparation for June spraying.

SUMMARY OF ACREAGE IN NEED OF CONTROL

Locality	Acres	Use	Control Method
Santa Fe N. F. James River	3000	Christmas Tree	mist blower
Cibola N. F. Sandia	2500	Christmas Tree	aircraft
	? ski area & camp grounds	Recreation	mist blower
Mount Taylor	1000	Christmas Tree	mist blower

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